INSTITUTE
TROPICAL AGRICULTURE
FEB 1947

DOMINICA.

ANNUAL REPORT

OF THE

Department of Agriculture

FOR THE YEAR

1945.

Printed at the BULLETIN OFFICE, Roseau, Dominica, B W.I.

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REPORT ON THE WORK OF THE DEPARTMENT OF AGRICULTURE

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NOTE. Report reduced in length in compliance with instruction.

PART I.

AGRICULTURE IN THE COLONY.

STAFF.

THE following additions and changes were made during the year. Mr. C.A. SEIGNORET, 2nd Class Clerk, was seconded to the Census staff as from 18th December, whilst Mr. R.R. WINSTON was seconded to this Department from the Treasury to act in his stead. Mr. A.V. WAN-PING. Agricultural Assistant, acted as Agricultural Superintendent from the 20th-31st December during the absence from the Colony of the Agricultural Superintendent.

POLICY.

Scheme D. 53, the five-year plan for Agricultural Development which was inaugurated in 1943, continued to govern the Department's policy. In the course of the year it has been possible to implement this policy in its main objectives. An important aim is the improvement of local livestock, and efforts directed towards this end are meeting with success and proving popular with the peasantry.

During the year a Forestry policy based on a report prepared under the direction of the Conservator of Forests, Trinidad, was formally adopted by the Legislative Council. In an island where Agriculture and Forestry are so inextricably interwoven this is of special significance and is the necessary prelude to improvement of a thoroughly unsatisfactory state of affairs. It remains now to enact the necessary legislation to enable the policy to be put into effect.

An important event was the formulation of 10-Year Sketch Plans, to be financed from Development and Welfare funds, for the development of Agriculture, Forestry and Fisheries These plans have been prepared in collaboration with Mr. C. C. SKEETE, the Director of Agriculture, Windward Islands, Dr. J. S. BEARD, Assistant Conservator of Forests, Windward Islands, and Dr. H. H. BROWN, Director of Fishery Investigations, British West Indies. The plan has, however, not yet been formally approved. It may be mentioned that schemes under the new Colonial Development & Welfare Act are scheduled to commence on 1st April, 1946.

As a basis for Agricultural development an "Outline of Agricultural policy for Dominica" has been drawn up and accepted by the Legislative Council. This forms the subject matter of Appendix III of this report.

The Department has continued to stress by word and example the vital importance of maintaining the maximum production of locally grown foodstuffs, both animal and vegetable.

The Government Marketing Depot continued to operate on a wartime footing.

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The Government Marketing Depot continued to operate on a wartime footing.

WEATHER CONDITIONS.

(*a*) **General Climatic Conditions** were favourable to agricultural production except for abnormal precipitation over the period October 4th – 5th which caused damage to crops through landslides and flooding. Falls ranging from 5″ to 14″ were recorded for the 24-hour period.

(*b*) **Rainfall** —75.32 inches was registered at the Botanic Gardens compared with 20 year average of 75.84 inches. The monthly distribution was somewhat erratic, February and October being considerably above the average, whilst that for November was much below.

(*c*) **Barometer.**—The highest reading recorded was 30.09 on 1st and 14th March and the lowest 29.81 on 23rd May and 21st December.

(*d*) **Temperature.**—The highest maximum temperature recorded was 92°F on 7th and 11th June and the lowest minimum 59°F on January 29th and March 31st.

PRODUCTION & EXPORT.

(As it has not been possible to publish export statistics since 1939, figures for the past six years are shown in the following Table).

TABLE OF EXPORTS FROM DOMINICA.

AGRICULTURAL EXPORTS — DOMINICA, 1940-42.

		1940.		1941.		1942.	
		Quantity.	F.O.B. Value £	Quantity.	F.O.B. Value £	Quantity.	F..OB. Value £
Lime Products:							
Concentrated Juice,	galls.	10,184	875	3,111	286	25,288	1,887
Raw Juice,	galls.	149,740	9,837	355,781	24,127	138,594	9,451
Lime Juice, Cordial	,,	—	—	—	—	—	—
Distilled Oil,	lbs.	28,804	20,086	36,452	50,498	25,284	54,610
Ecuelled Oil,	,,	—		525	1,111	354	976
Oils in Solution,	,,	2,386	1,772	3,605	4,609	1,897	4,058
Green Limes,	brls.	5,370	6,995	6,101	9,654	828	1,880
Pickled Limes,	,,	33	52	9	16	—	—
			39,617		90,301		72,862
Other Fruits and Allied Products:							
Oranges, C/crates		8,941	4,806	13,327	7,874	6,946	3,598
Orange Oil,	lbs.	766	240	1,112	747	217	165
Grapefruit, C/crates		2,983	1,219	8,596	4,008	3,019	1,144
Grapefruit Juice,	galls.	—		42	4	—	—
Bananas,	bunches	54,705	4,909	69,719	6,367	17,658	1,715
Mangoes, C/crates		7,375	2,200	6,929	1,630	2,689	668
Avocado Pears,	T crates	8,598	1,933	6,208	1,096	729	74
Miscellaneous		—	739	—	1,070	—	1,941
			16,046		22,796		9,305
Cocoa Products:							
Cocoa, Raw	lbs.	257,631	3,524	407,441	6,347	259,973	6,318
Cocoa, Prepared	lbs.	313	7	127	2	267	11
			3,531		6,349		6,329
Coconut Products:							
Copra.	lbs.	501,243	2,170	403,220	1,726	453,204	3,395
Coconuts,	No.	1,087,653	3,901	1,193,710	4,521	645,349	3,436
			6,071		6,247		6,831
Sugar Products:							
Rum,	galls.	4,813	715	6,199	917	7,417	1,213
Bay Products:							
Bay Oil,	lbs.	24,464	3,183	50,870	8,050	24,657	5,523
Bay Rum,	galls.	561	117	796	166	598	149
			3,300		8,216		5,672
Spices:							
Vanilla,	lbs.	10,301	10,301	12,019	18 667	18,019	44,480
Nutmegs			—			—	
Ginger		1,260	8	2,274	16	3,014	48
			10,309		18.683		44,528
Other Products:							
Coffee,	lbs.	588	10	455	12	4,699	131
Vegetables							
Farine							
Hides & Skines							
Leather, Unmanufac/d							
Turtle Shells							
Tobacco, Cigars & Cigarettes,	lbs.	1,439	242	13,388	2,532	8,706	1,798
Miscellaneous			920		1,745		2,128
			1,172		4,289		4.057
Forest Products:							
Hardwood,	ft.	43,665	240	8,251	56	66,027	752
Firewood, Cords		230	94	394	150	781	363
Canoe Shells		—	—	—	—	—	—
Shingles		—	—	—	—	—	—
Charcoal		—	—	—	—	—	—
Locally made Boats	No.	9	36	—	—	—	—
Baskets		—	—	—	—		—
Other Forest Products		—	22		204		14
			392		410		1,129
Value of Local Exports ...			81,153		158,208		151,926
Total Re-Exports			11,405		5,519		3,375
Value of Total Exports ...			92,558		163,727		155,301

TABLE OF EXPORTS FROM DOMINICA.

AGRICULTURAL EXPORTS — DOMINICA. 1943-45.

		1943.		1944.		1945.	
		Quantity.	F.O.B. Value £	Quantity.	F.O.B. Value £	Quantity.	F..OB. Value £
Lime Products:							
Concentrated Juice,	galls.	15,985	1,271	2,673	219	50	4
Raw Juice,	galls.	152,429	7,581	189,415	19,308	317,318	33,534
Lime Juice, Cordial	,,	—	—	—	—	—	—
Distilled Oil,	lbs.	33,126	46,804	40,706	57,386	19.745	33,317
Ecuelled Oil,	,,	960	2,231	1,739	4,264	3,747	10,318
Oils in Solution,	,,	—	—	—	—	1,582	2,562
Green Limes,	brls.	605	756	499	524	727	825
Pickled Limes,	,,	—	—	—	—	—	—
			58,643		81,701		80,560
Other Fruits and Allied Products:							
Oranges, C/crates		8,906	3,524	9,912	7,283	9,326	5,159
Orange Oil,	lbs.	1,703	1,230	883	621	720	710
Grapefruit, C/crates		5,243	1,800	7,572	3,501	7,264	4,092
Grapefruit Juice,	galls.	—	—	—	—	—	—
Bananas,	bunches	4,223	422	4,047	394	4,132	344
Mangoes, C/crates		3,982	1,169	3,958	1,215	3,294	825
Avocado Pears,	T crates	868	141	715	119	3,360	546
Miscellaneous		—	1,756	—	2,822	—	4,757
			10,042		15,955		16,433
Cocoa Products:							
Cocoa, Raw	lbs.	401,819	6,960	332,520	7,328	296,788	7,593
Cocoa, Prepared	lbs.	1,777	77	256	15	64	2
			7,037		7,343		7,595
Coconut Products:							
Copra,	lbs.	591,892	6,977	509,400	7,712	560,765	9,095
Coconuts,	No.	359,046	2,244	895,031	5,594	1,476,496	11,832
			9,221		13,306		20,927
Sugar Products:							
Rum,	galls.	9,935	1,738	12,456	2,108	8,322	1,744
Bay Products:							
Bay Oil,	lbs.	31,232	6,270	24,275	6,265	31,877	5,922
Bay Rum,	galls.	411	103	287	73	195	60
			6,373		6,338		6,002
Spices:							
Vanilla,	lbs.	28,206	39,714	50,833	68,399	64,984	92,078
Nutmegs		—	—			—	
Ginger		6,919	145	3,693	77	2,242	40
			39,859		68,476		92.118
Other Products:							
Coffee,	lbs.	4,536	132	2,459	81	658	22
Vegetables							
Farine							
Hides & Skines							
Leather, Unmanufac/d							
Turtle Shells							
Tobacco, Cigars & Cigarettes,	lbs.	11,094	2,456	5,028	1,124	8,111	2,168
Miscellaneous			1,845		5,349		3,003
			4,433		6,554		5,193
Forest Products:							
Hardwood,	ft.	74,448	611	59,722	558	12,638	113
Firewood, Cords		1,609	1,100	2,064	1,732	2,242	2,242
Canoe Shells		—	—	—	—	—	—
Shingles		—	—	—	—	—	—
Charcoal		—	—	—	—	—	—
Locally made Boats	No.	—	—	—	—	1	3
Baskets		—	—	—	—	—	—
Other Forest Products			38		16		1
			1,749		2,306		2,359
Value of Local Exports			139,095		204,087		232,931
Total Re-Exports			5,363		6,247		8,196
Value of Total Exports			144,458		210,334		241,127

The monetary value of Exports for the year shows an increase of 9% over 1944 which latter was the highest value recorded since 1920. Adverting to the Table of Exports, two points call for special comment. (*a*) the first and more striking is the substantial increase in the production and value of Vanillas over the past six years—the former increasing six-fold and the latter ninefold. It was the most important single export in 1945 and accounted for 38% of the total value of exports (*b*) Coconut products have increased three and half times in value as a result of higher prices. No new plantings have come into bearing, but production has increased by virtue of more nuts being collected.

Observations relating to the following products are recorded below.

Limes.—As a result of a reduction of 40% in the island's quota for the United Kingdom some stocks of lime-oil remained unsold at the close of the year. Production of limes over the past six years calculated as barrels of fruit is set out in the following Table.

Product.	*Barrels of Fruit.*					
	1940.	*1941.*	*1942.*	*1943.*	*1944.*	*1945.*
Distilled Lime Oil ..	71,412	107,781	74,790	96,408	116,701	47,994
Ecuelled ,, ,, ..	—	4,200	2,832	7,680	13,912	29,976
Oils in Solution ..	7,953	12,017	6,323	—	—	5,273
Green Limes	5,370	6,101	828	605	499	727
Pickled Limes.. ..	33	9	—	—	—	—
	84,768	130,108	84,773	104,693	131,112	83,970

The figures for any one year do not necessarily represent annual production as there may be a carry-over of products at the end of a calendar year. Nevertheless the average annual production of 103,237 barrels is an accurate estimate of present output.

Vanillas.—The crop was a record one as result of extensive plantings in previous years. Expansion continues. The price of green beans averaged 3/- per lb. Mention should be made of the Dominica Vanilla Growers Association which was formed in the latter part of 1944, and operated for the first time this year. It is a purely private enterprise and is in no way associated with Government.

Coconut products.—At a Conference of Oils & Fats in the Caribbean Area held in Barbados in January of this year, it was decided that in order to assist the war effort it was desirable for the British Caribbean Area to supply its own requirements in oils and fats, as far as possible. It was further decided that Copra required by Barbados should be supplied from the Windward Islands of which Dominica could supply approximately 540 tons. The price agreed to was £35 per ton, f.o.b., for three years, until 31st January, 1948. The large number of nuts exported during the current year is explained by the fact that Dominica was allowed two months in which to erect Copra Driers; until the end of that period it was permitted to export under licence any surplus nuts to Puerto Rico or elsewhere outside the area.

Rum.—Although only relatively small quantities of rum are exported, the local production has more than doubled since 1940 as the following Table will show.

1940	—	44,223 Gallons
1941	—	45,214 ,,
1942	—	56,834 ,,
1943	—	74,120 ,,
1944	—	84,852 ,,
1945	—	91,898 ,,

The rum industry has become an important one in the island's economy, the more so as most of the cane is peasant grown.

The amount collected in Excise for the current year amounted to £20,894.

Bananas.—The Dominica Banana Association was again subsidized by a grant from Development & Welfare which enabled the industry to be maintained and was an important factor in solving the food problem. The Association purchased 21,154 stems during September 1944 to August 1945.

PESTS & DISEASES.

Citrus.—The incidence of Withertip of Limes *Glœosporium limetticolum* was not above average. No severe outbreaks of fruit-piercing moths or Citrus Weevil (*Diaprepes*) were reported.

Vanilla.—Mr. W.T. DALE, B.SC., A.I.C.T.A., of the Mycology Department of the Imperial College of Tropical Agriculture, visited the Island from June 15th to July 9th, 1945, to study diseases associated with this crop. His report states that Root disease is the major pathogenic problem of Vanilla cultivation in Dominica. From diseased material, a fungus identified as a *Fusarium spp.* which appears to be very like *F. Batatatis* Var. *Vanillæ* was isolated. Root diseases are notoriously difficult to control and direct methods appear to be out of the question. Methods of control would appear to lie in obtaining environmental conditions favourable to growth of the vanilla plant and unfavourable to the pathogene. Until further information is available, the following measures are recommended :—

(*a*) Use of long, healthy sets for planting.

(*b*) Correct degree of shading.

(*c*) Avoidance of over-pollination of flowers.

(*d*) The application of crushed limestone at the rate of 6 lbs. to each plant on heavy, clay acidic soils, and lesser quantities on less acidic and lighter soils.

Cocoa.—Mr DALE also made a survey of Cocoa diseases and reports that the position is, generally speaking, satisfactory. No trace of either Witches Broom or the Virus disease recently discovered in Trinidad could be found. Black pod caused by *Phytophthora palmivora* does a little damage in wetter areas and might be serious if cocoa cultivation expanded into the wetter districts. The Root disease caused by *Rosellinia spp.* is the worst Cocoa disease in Dominica. Pois doux (*Inga spp.*), Breadfruit and Avocado trees are very susceptible to the disease and should not be planted adjacent to new cocoa plantings.

Bananas.—Panama Disease (*Fusarium cubense*). The average monthly disease incidence for all districts was 8.52% of infected stools as compared with 2.35% for the previous year.

Tobacco.—Tobacco Mosaic (*Nicotiana virus*) was found in a high percentage of plants at Hillsborough Estate.

Minor Crops : Cabbages.—Some damage was caused by Caterpillar of the Diamond-backed moth (*Plutella spp.*)

Tomatoes.—A Bacterial Wilt disease, possibly *Corynobacterium michiganense*, was severe and caused heavy losses.

PART II.

WORK OF THE DEPARMENT.

PUBLIC GROUNDS.

Grounds at the Library, Memorial Park, Morne Bruce and Military Cemetary were maintained in good order. The Military who were occupying the barracks on Morne Bruce left the Island during the year and the Department once more resumed responsibility for the lands attached.

BOTANIC GARDENS.

(*a*) **Decorative Section.**—This was maintained in attractive condition. Some new plantings were made, including the introduction of twelve orchids new to Dominica.

(*b*) **Economic Section.**—Crops grown in observation and multiplication plots comprise the following:—

(i) Sweet Potatoes : Eight varieties, viz B.5, B.29, B.31, B.44, B 64, Caroline Lee, V. 52 3-months vine, were maintained to provide plant material for distribution.

(ii) Yams : The same twelve varieties established last year were again planted to serve as plant material for distribution. Highest yielding varieties were again Barbados Lisbon, Red Lisbon, Seal Top and Statia.

(iii) Pigeon Peas : The two introduced Trinidad varieties, Tobago and Lasaiba again gave good results and seed has been distributed to all District Centres.

(iv) Maize : Jamaica Selected Yellow (J.S.Y.) and Native Jamaica were tried, both giving disappointing results.

(v) Cowpea : Brahman Cowpea introduced from British Guiana was tried for the first time and has given promising results.

(vi) Miscellaneous Beans : No other varieties tested have shown themselves superior to the varieties selected last year, viz. Kentucky Wonder (U.S.A.), Stringless Green Pod (U.S.A.), Bountiful (U.S.A.), Six Weeks Bush Bean (Antigua) and Best Pole Lima (U.S.A.)

(vii) Sugar Cane : The following varieties received from the Plant Quarantine Station, Trinidad, were established: B.41227, B.4145, B 3337, B.4098, B.37172, B.40105.

(viii) Manilla Hemp : The new variety of Manilla Hemp received from Trinidad is now well established and suckers will be available for planting out next year.

(ix) Tropical Kudzu (*Pueraria phaseoloides*): A small quantity of seed of this crop was sown, and a few plants are now established. It is not possible at this stage to make any comment on its performance under local conditions.

(x) Grasses : Seed of two new fodder grasses, Coloniao (*Panicum spectabile*) from Brazil and Jaragua (*Hyparrhenia rufa*) from Venezuela were sown. The former has germinated satisfactorily, but the latter failed entirely.

(xi) Miscellaneous Cover Crops : The following were received and established: *Crotalaria juncea*, *C. spectabilis*, *C. usaramœnis*, *Phaseolus mungo*; seed has been collected for further sowings. *Alepicarpus vaginalis* was also tried but proved a failure.

(xii) Derris : Sample harvests were made from the trial plots of this crop and submitted to the Imperial Institute for a report as to its rotenone content.

Fodder Grass Plot.—The plot established in 1943 continues to grow satisfactorily, and yielded at the rate of 19 tons per acre per annum.

Cocoa.—Data concerning yield and self-compatability continued to be recorded from selected trees. Individual tree records were also continued at Picard Estate. The establishment of a nursery of selected Clones is making good progress, the limiting factor being availability of plant material. During the year 128 plants comprising 11 different clones

have been planted out either as cuttings, buddings or grafts.

Marked improvement has been made in the technique of rooting cuttings.

European Vegetables.—A variety of vegetables were sown in demonstration plots.

EXPERIMENT STATION.

(*a*) **Limes.**—The crop amounted to 1,110 barrels as compared to 1,172 brls. for the previous year. Sale was by quarterly tender.

For purposes of comparison the previous year's prices are also quoted, the following prices being received each quarter.

	1944	*1945*
1st. Quarter	9/6	11/6
2nd. ,, ...	9/6	11/6
3rd ,, ...	10/6	11/6
4th ,, ...	11/6	11/6

(*b*) **Cashew Nuts.**—The plot planted in 1943 continues to make excellent progress. Planting at stake is proving superior to transplanting of seedlings. A small quantity of fruit was reaped.

The soil conservation measures adopted continue to be effective.

PLANT DISTRIBUTION.

(*a*) Budded or Grafted Plants.

Washington Navel Orange	942 plants
Other Oranges	510 ,,
Grapefruit	317 ,,
West Indian Limes	6,856 ,,
Other Citrus	173 ,,
Avocado Pears	159 ,,
Mangoes	84 ,,
Total	9,041 plants

Other Economic Plants.

Sour Orange Stocks	2,530 plants
Seville Orange Stocks	200 ,,
Wild Grapefruit Stocks	7,375 ,,
Rough Lemon Stocks	—
Coconut Seedlings	7,053 ,,
Nutmeg Seedlings	647 ,,
Cocoa Seedlings	2,991 ,,
Coffee Seedlings	743 ,,
Cocoa Pods	78 pods
Fodder Grass	3,232 cuttings
Sweet Potato	7,909 ,,
Sugar Cane	8,227 ,,
Yams	3,045 plants
Miscellaneous	361 ,,
European Vegetable Seed	194 lbs.

(*b*) **Sugar Cane Nurseries.**—The four nurseries established in co-operation with Estates have been continued as ratoons, and are materially helping in the spread of new varieties which are displacing the old and unimproved varieties which hitherto have been universally grown.

PLANT INTRODUCTIONS.

Jamaica Selected Yellow Maize	1 pkt.	Jamaica Agric., Soc.
Native Jamaica Maize	1 pkt.	,, ,, ,,
Trop. Cauliflower Seed (Early Market)	1 pkt.	Dir. Agric., Grenada.
,, ,, ,, (Early Patna)	1 pkt.	,, ,, ,,
Brahman Cowpea	10 lbs.	,, ,, British Guiana.
Pinus Occidentalis Seed		Societe Haitiano-Amerieaine, Port au Prince Haiti.
Hill Rice (Heavy bearer)	5 pkts.	Dept. Agric., Trinidad.
Dwarf Coconuts	328 nuts	Dept. Agric., St. Lucia.
Shallots	3 lbs.	Mrs. B. Honeychurch.
Maize Seed	2 lbs.	Dept. Agric., St. Lucia.
Sugar Cane B 41227	6 cuttings	Plant Quar. Sta., T/dad.
,, ,, B 3337	6 ,,	,, ,, ,, ,,
,, ,, B 4098	6 ,,	,, ,, ,, ,,
,, ,, B 37172	7 ,,	,, ,, ,, ,,
,, ,, B 40105	6 ,,	,, ,, ,, ,,
,, ,, B 4145	7 ,,	,, ,, ,, ,,
Sour Grass	12 plants	Dept. Agric , St. Kitts.
Tropical Kudzu (*Puerariu phaseoloides*)	1 pkt	Dir. Agric., Grenada.
Tobacco Seed (8 vars.)	8 pkts.	Slate Seed Co., South Boston, Virginia.
Crotalaria Spectabilis	1 pkt.	N.Y. Bot. Gardens, Bronx Park, N.Y.
,, juncea	1 pkt	do.
,, usaramœnsis	1 pkt.	do.
Phaseolus mungo	1 pkt.	do.
Alipicarpus vaginalis	1 pkt	do.
Coloniao Grass Seed from Brazil	1 pkt.	Dir. Agric , Windward Islands.
Jaragua ,, ,, ,, Venez.	1 pkt.	,, ,, ,, ,,

LIVESTOCK.

(*a*) **Stud Animals.**—Satisfactory progress was made and the number of services has shown a substantial increase over the previous year. The number of stud animals maintained was increased by two Grade Holstein Bulls and four Rams. Two bucks and one Ram died during the year. The following animals were on strength at the end of the year :

Five	Grade Holstein-Zebu Bulls
One	Thoroughbred Stallion
Two	Bucks
Five	Rams (3 Blackheaded Persian and 2 Blackbellies).

The return of services is set out below and for purposes of comparison previous year's figures are quoted :

Animal.	*Number of services*	
	1944	*1945*
Bull —	153	331
Goat —	145	56
Sheep —	93	136
Horse —	5	30

(*b*) **Rabbits.**—Rabbitrys were maintained at five Centres and in the course of the year 181 services were given and 42 rabbits distributed. The number of services does not in-

clude the loan of bucks to Villages. Interest in Rabbit-rearing was maintained and is a valuable source of meat.

(*c*) **Poultry.**—Six pens of pure bred poultry were maintained at the Botanic Gardens and poultry have been established at five District Centres. Egg distribution totalled 1,376 for the year, as compared to 717 for the previous year.

(*d*) **Ducks.**—Pekin ducks were introduced from Trinidad, and are making satisfactory progress to date.

EXTENSION WORK.

This consists in the supply of advice to all growers through personal visits, demonstration plots, and all other appropriate measures. It is agricultural education in its broadest aspect.

(*a*) **Advisory.**—The district organisation worked satisfactorily and the policy of making contact with the peasantry in their own surroundings was continued. All members of the staff were concerned in this work and paid visits to small holdings and estates, and it is felt that the Department has continued to earn the confidence of the planting community.

It must be pointed out, however, that a serious limiting factor to the dissemination of advice is the lack of group activities, such as farmers' groups. Attempts during the past three years to form District Agricultural Committees have met with disappointing results. Experience has revealed the paucity of leadership among the rural communities. It is hoped that with the co-operation of the Social Welfare Officer this state of affairs will in time be remedied, though it promises to be a long and arduous task. On the other hand, it is encouraging to record the formation of a 4-Club in one district, which has made a promising start.

(*b*) **Investigational & Demonstration Centres.**—Good progress was made during the year, three more Centres having been completed, bringing the number to five. This is well within the schedule as set out in the Scheme. The various objectives as detailed in last year's report are being put into operation as circumstances permit.

(i) Plant Nurseries are established at all Centres and plant material was available for distribution to growers in the district.

(ii) Stud animals are installed at all Centres and have been available to stockowners.

(iii) On three Centres demonstration holdings have been laid down which have as their object the teaching of 'mixed-farming', including conservation measures.

(iv) Observation plots of new crops have been put down on all Centres.

(v) Investigational work. A manurial experiment designed to supply basic data for mixed farming in the wet tropics was put down in two areas having different rainfall conditions.

(*c*) (i) **Experiments on Estates.**—The two experiments put down in co-operation with Estates, viz., the Sugar Cane Var. trial and the manurial trial on Derris are making satisfactory progress and will be reaped early next year.

(ii) **Trial plots of Manilla Hemp.**—(Musa Textilis). Six plots are now established. Of these, five are making satisfactory progress but one has proved a failure, owing to unfavourable growing conditions.

(iii) **Tobacco.**—Observation plots of ¼ to ½ acre each were put down at the following Demonstration Centres: Marigot, Portsmouth, La Plaine and Grand Bay during the latter part of the year. Varieties of Tobacco planted are—Jamaica Wrapper, Tjetock, Hickory Pryor, White Burley and Yellow Mammoth, and the seed used was imported from the United States of America.

SOIL CONSERVATION.

Increased awareness of the need for soil conservation measures continues to make itself evident, and was reflected in demands by growers for advice in the layout of contour drains and other conservation measures. One Estate on the advice of and directed by the Agricultural Department adopted conservation measures, including planting of grass strips, on 30 acres of steeply sloping land.

Wastage of forest resources and destruction of vegetation continues unchecked, the evil effects of which were witnessed in landslides and flooding of rivers brought on by an abnormal fall of rain in a period of 24 hours, resulting in serious damage to roads and some damage to crops.

The proposed Forestry legislation has not yet been approved by the Legislature. It is earnestly hoped that this important matter will receive the attention it deserves, in the very near future.

AGRICULTURAL EDUCATION.

(*a*) **Pupil Apprentice Course.**—Eighteen pupils were in attendance throughout the year. One completed the course and twelve new ones were enrolled.

(*b*) **Refresher Course.**—A Refresher Course for Agricultural Instructors was held in Roseau from Monday 17th September to Thursday 20th September, and for Assistant Instructors from 26th to 28th November.

(*c*) **Periodicals.**—The following periodicals were received and circulated amongst the staff :—

"Ths Smallholder and Home Gardening."
"The Journal of the Jamaica Agricultural Society."
"The Farm Journal of British Guiana."
"Proceedings of the Agricultural Society of Trinidad & Tobago."
"The Negro Farmer."
"The American Small Stock Farmer."

PUBLICATIONS.

The following publications were published in the course of the year.

(i) "Report on a Visit to Dominica" June 15th to July 9th, 1945, by W. T. DALE, B.Sc., A.I.C.T.A.

(ii) Food Crop Pests Investigation—"Some Simple Methods of Controlling Insect Pests of Local Food Crops" by R. G. Fennah, Entomologist.

(iii) "Copra Kilns" compiled by Officers of the Agricultural Department.

LABORATORY.

Return of chemical analyses and tests are set out hereunder.

Product.	*Type of Tests.*	*No. of Samples.*
Milk	Analysis	70
Lime Oil ..	Sp. Gravity	—
Lime Juice, Con.	Citric Acid Content	—
Lime Juice, Raw	,, ,, ,,	20
Bay Oil. ..	Phenol Content	10

MANAGEMENT OF GOVERNMENT OWNED ESTATES.

During the year the work of the Department was considerably added to by the management of two Estates both situated in the Northern District.

(i) **Hampstead Estate.**—This Estate was originally taken over by Government in 1942 in lieu of debt, and independently managed until 31st March of this year, after which date the Department assumed control. No new plantings were made, work on the Estates being confined to maintenance of the present cultivation. It is the policy of Government to offer the Estate for sale next year.

The following produce obtained from the Estate was disposed of in the course of the year.

Coconuts ..	62,900 dried nuts
Copra ..	45 tons
Limes ..	94 barrels
Grapefruit .	6,175 fruit
Oranges ..	504 ,,

The gross revenue was £1,667. 9*s*. 5*d*. Total expenditure amounted to £882. 1*s*. 7*d*, resulting in a nett profit of £845. 7*s*. 10*d*.

(ii) **Melville Hall Estate.**—This Estate was purchased by Government in order to acquire a site for an Airport. The Department assumed control as from 1st May this year. Approximately 30 acres of Coconuts and 3 acres of Grapefruit have been cleared from the proposed Airfield site. The remaining cultivated area consists of 150 acres of Coconuts and 30 acres of mixed citrus, mainly limes. It is the policy of Government to continue the management of the Estate.

The following produce obtained from the Estate was disposed of during the period 1st May – 31st December of the current year.

Coconuts ..	54,300 dried nuts
Copra ..	35 tons
Limes ..	149 barrels
Grapefruit.	5,800 fruit.

The gross revenue was £1,200. 17*s*. 8*d*, total expenditure amounted to £628. 4*s*. 8*d*, resulting in a nett profit of £572. 13*s*. 0*d*.

ACKNOWLEDMENTS.

It is with pleasure that I record the thanks and appreciation of the Staff of the Department to all those who in any way have assisted and co-operated in the work of the Department. The local press has once more assisted materially in giving publicity to our work. The thanks of the Department is also extended to planters for their hospitality to visiting officers. Finally, I wish personally to express my gratitude to the Staff for their continued support.

L. L. DE VERTEUIL,
Agricultural Superintendent.

APPENDIX I.

GOVERNMENT MARKETING DEPOT.

WAR EMERGENCY WORK.

Emergency control work continued to receive priority attention from the Staff. These duties include (*a*) Price Control, (*b*) Slaughter of Livestock, (*c*) Meat and Fish Control, including rationing, (*d*) Guarantee to purchase and marketing of Surplus Products, (*e*) Subsidy to Livestock, (*f*) Advances to Butchers, (*g*) Subsidy to Fishing Industry.

Owing to the promotion of the Preventive Officer in July the Officer-in-Charge, Marketing Depot, had to assume full responsibility for all control work and subsidisation of local industries.

The Department actively assisted in the purchasing of Livestock for slaughter in Roseau and was instrumental in obtaining two consignments of cattle and sheep from St. Kitts-Nevis. These were received in the month of December and greatly relieved the shortage at Christmas.

Active part was also taken in securing and arranging for the distribution of fishing tackle.

Many other duties involving special enquiries devolved upon the Officer-in-Charge who has been appointed an Authorised Agent for the purpose.

STAFF.

There has been no change in or addition to the Staff.
The Officer-in-Charge was absent on Study Leave from the 23rd May to 28th June.

FRUIT TRADE.

The dislocation of trade occasioned by the war continued to operate against the resumption of full-scale packing operations. Apart from the lack of shipping facilities for transportation of our fruit to northern Markets, all stocks of material for packing and processing fruit have either deteriorated or have been consumed, and replacements have been almost impossible.

These factors set limitations to the number and extent of shipments that were forwarded to the more lucrative and competitive markets of Canada and Bermuda,

The Depot activities were therefore more directly concerned with preparing fruit for shipment to West Indian Markets.

The withdrawal in July, by the owners of the services of an Auxiliary Schooner which plied between Dominica and Barbados made it difficult to keep our Agents in constant supply of fruit handled under the organisation for marketing in that Island.

Consignments of mostly oranges continued to be forwarded to Antigua and St. Kitts as regularly as Sailing Vessel opportunities would permit.

The total number of Crates packed during the year was 5,981, which shows an increase of 235 Crates when compared with the previous year.

The quantities were destined as follows :—

Canada	3 Consignments	1,388 Crates
Bermuda	1 Consignment	786 ,,
Barbados	18 Consignments	3,074 ,,
Leeward Is.	16 ,,	733 ,,
		5,981 Crates

VANILLA INSPECTION.

All sales of Vanilla in Roseau were supervised by the Staff of the Depot, and the total exports of Cured Vanilla was inspected for quality, and weights checked prior to shipment.

MEETINGS, BOARDS, Etc.

The Officer-in-Charge is Secretary to various Committees and gives below the number of meetings held during the year.

Valuation Committee of Export Values	Weekly
Fruit Trade Committee	5 Meetings

Permanent Exhibition Committee	Nil
Committee to make recommendations for re-organising Vanilla Industry	3 Meetings
Dominica Lime Growers Association	Nil.

GENERAL.

Three consignments of Onions, Tomatoes and Shallots received from the G. M. Depot, Montserrat, were sold in the local Market.

Grain and Poultry feeds were ordered regularly for disposal to stock and poultry raisers.

The Cold Storage and Ice Plant was kept in running order and the supply of ice maintained.

G. A. WINSTON,
Officer-in-Charge,
Government Marketing Depot.

APPENDIX II

AGRICULTURAL LEGISLATION.

Minimum Wage (Agricultural Labourers) Proclamation, 1945, (S.R. & O. 1945 No 29).

Minimum Wage (Agricultural Labourers) (Amendment) Proclamation, 1945, (S. R. & O. 1945, No. 41).

APPENDIX III.

OUTLINE OF AGRICULTURAL POLICY FOR DOMINICA

INTRODUCTION.

Agricultural production has always been the sole source of income for the people of Dominica. No mineral resources have so far been discovered. The land, from which the soil is derived, is therefore the Island's most important asset.

In consequence of the Island's topographical, geological and soil conditions it will be possible to carry on agricultural production of a permanent nature in certain limited areas only. The accurate definition of such areas and the formulation of a land allocation policy cannot be attempted until a soil survey of the Island has been completed and until the interrelationship between the data furnished thereby and the topographical and other environmental features has been carefully studied.

The economy of the Colony must, by reason of its natural characteristics, continue to be based almost entirely on agricultural production. Moreover, the ability of the Island to provide a satisfactory standard of living for its people largely depends upon the measure of prosperity of its agriculture. Improved standards of living can, therefore, in general only be achieved by raising the prosperity of the Island's agriculture: the level of prosperity of agriculture can in turn only be raised through greater effort and efficiency.

OBJECTIVES.

1. *Conservation of Natural Resources.*

Conservation of natural resources is of primary importance.

Uncontrolled and indiscriminate deforestation often causes floods which result in destruction of property, such as roads and bridges, and ultimately leads to serious loss of soil. Undesirable forms of deforestation should therefore be discouraged.

The ruination of land by harmful methods of cultivation or wilful neglect should be prevented.

2. *Security of Land Tenure.*

In all forms of tenure other than freehold, the interests of both the landlord and

the tenant should be legally safeguarded. Compensation for unexhausted improvements effected by the tenant, as well as penalties for dilapidations caused by neglect and bad systems of agriculture, are essential for progress in agriculture.

It is essential in the general interests of the community that "the good of the land" should be kept prominently in view in the conditions prescribed for all forms of tenure.

3. *The Maintenance and, wherever Economically Practicable, the Expansion and Improvement of Crop Production for Export to the World's Markets.*

Production of wealth is a fundamental necessity for maintaining and improving the social standards of life of the community. Agriculture is almost the only source of wealth in the Island. Accordingly, the production of staple commodities for sale in the world's markets is essential as the chief means of obtaining the wealth from which the public income is annually derived.

4. *The Improvement of Small Scale (or Peasant) Agriculture.*

The abandonment by small cultivators of the common practice of shifting cultivation and its replacement by a permanent system of farming are essential steps for the proper development of agriculture and the welfare of the community.

5. *Stability of Farming and Improvement of Food Supply.*

The basis of farming should be broadened. Single crop production should be discouraged and wherever practicable replaced by multiple crop production and mixed farming with a greater output of animal products.

Systems of both large and small scale agriculture should contribute to the security and dietary soundness of food production.

6. *Efficiency in the Operations of Production, Processing and Distribution of Agricultural Products*

Agricultural efficiency, relative to modern methods of production, is essential if the rural community is to reach a higher standard of living. This applies to the use and management of the land, to labour and capital, as well as to the processing, transport, standardisation and marketing of agricultural produce.

POLICY.

It is the policy of Government:—

(i) to protect, manage, control the use of and improve all forest areas prescribed in accordance with the advice of the various Government departments and other interests concerned.

(ii) to encourage the proper use of land by the adoption and practice of systems of agriculture which will conserve the soil and improve its fertility by—

- (*a*) advising as to the allocation of production in accordance with the findings of a soil survey;
- (*b*) the investigation and demonstration of suitable systems of agriculture in the varying ecological conditions of the Island;

(iii) to provide the means of regularising systems of land tenure for the protection of both the landlord and the tenant and the conservation of the soil by the enactment of appropriate legislation;

(iv) to render advice, guidance, and such other forms of assistance as may be practicable, in the production of staple commodities for exports to the world's markets by—

- (*a*) scientific investigation;
- (*b*) the distribution (within practical limits) of selected plant material;
- (*c*) the demonstration of suitable cropping methods;
- (*d*) the provision of technical advice in methods of processing;
- (*e*) the operation of a marketing organisation when this is necessary in the general interests of the community;

(v) to encourage the abandonment of the undesirable and wasteful system of shifting cultivation commonly practised by small cultivators;

(vi) to encourage and to assist small cultivators to establish and maintain them-

selves under a permanent system of agriculture by—

(*a*) the demonstration of permanent systems of small scale agriculture.

(*b*) facilitating whenever possible the provision of land to small cultivators for the practice of approved systems of agriculture.

(*c*) by affording assistance whenever possible in the construction of houses and roads and the provision of water supply and other social amenities.

(vii) to encourage the practice of more stable systems of agriculture by—

the operation of agricultural stations in various parts of the Island for the purpose of investigating and demonstrating methods of crop diversification, systems of crop rotation in short term cropping, mixed farming, the care and management of livestock, the preparation of pen manure and the use of chemical manures, and the preparation and grading of produce for market;

(viii) to urge the increased home production of the basic food requirements of the people by—

(*a*) the distribution of suitable varieties of the more important food crops.

(*b*) the demonstration of methods of producing food crops suitable for the preparation of a balanced diet.

(*c*) encouraging the rearing of livestock and the greater consumption of animal products.

(*d*) the demonstration of clean milk production.

(*e*) assisting in the organisation of marketing and storage of food crops.

(*f*) the introduction of protective tariffs for selected food crops or animal products whenever such action would be in the general interest of the community;

(ix) to encourage the practice of efficient methods of production processing and distribution of agricultural products by—

(*a*) the teaching of crop and animal husbandry in the schools.

(*b*) the provision of facilities for training agricultural instructors, overseers and a nucleus of small farmers.

(*c*) the demonstration of approved methods of agricultural production and livestock management.

(*d*) the provision of facilities for obtaining agricultural credit.

(*e*) the provision of technical advice in methods of processing.

(*f*) the encouragement of the formation and operation of co-operative organisations of producers.

(*g*) the adoption of measures to reduce the common practice of praedial larceny and ultimately to eradicate the evil.

LAND SETTLEMENT POLICY.

1. So long as the Colony is entirely dependent on an agricultural economy it is essential that the subject of land settlement, and indeed all other subjects relating to agriculture, should be viewed in the light of both the present and long-term interests and requirements of the whole community. The function of land settlement is to play a progressive part in the economic and social life of the community; no other result of land settlement can be tolerated. The aim of land settlement should to establish, within a well-designed economic framework for the whole Island, a contented rural community adopting agriculture as a way of life and enjoying such measure of prosperity as the circumstances of Dominica permit. The chances of realisation of the function and aim of land settlement must be carefully weighed in the formulation of land settlement policy; and the function and aim of land settlement must be prominently kept in view in the planning and development of land settlement.

2. A broad and rational approach to the subject of land settlement will be necessary if the social standards of the community are to be improved on a lasting economic basis. A

comprehensive plan of land settlement must be prepared in the light of the economic and social needs of the community and every reasonable precaution taken to ensure the success of the individual settlers. Careful planning is necessary to conserve the natural resources of the Colony; to provide the framework within which the settler may achieve the greatest possible measure of prosperity; to avoid disappointment and discontent; and to make the most effective use of public funds. Moreover, the West India Royal Commission 1938-39 recommended that mixed farming and not specialisation on export crops must be the basis of land settlement. Accordingly, the most urgent need in the planning and development of land settlement is the determination, by investigation and trial, of sound farming systems suited to the varying conditions of the Island, and then, as far as possible, the demonstration of such systems.

3. The first essentials for successful land settlement are healthy conditions, a good water supply and soil conditions which at least offer reasonable chances of economic agricultural production. The selection of areas for land settlement should be undertaken by a central authority in collaboration with agricultural, forestry and medical services. Care should be taken to avoid disturbing existing efficient agricultural units and all interests affected should be consulted. The layout of the settlement area should be designed to facilitate soil conservation, efficient agricultural production and the economical provision of the necessary community and social services. The size of holdings must be regulated in relation to the physical and potential economic conditions of different parts of the Island and to the type of farming undertaken. Different sized units should be provided to accommodate the requirements of the individual concerned; the most capable and energetic of the settlers should be enabled to move to larger holdings as they gain experience and are able to undertake greater responsibility. It is advisable to plan for the development of a type of farmer who can operate an intermediate-sized farm.

4. Co-operation among producers is an essential factor for achieving the economic betterment of the people which, in turn, is a prerequisite to the maintenance of a higher standard of living. Land settlement facilitates the introduction of elementary forms of co-operation among small holders. Conservation of natural resources of soil, forest and water, for example, can only be successfully realised in a collection of small agricultural holdings by the application of measures on a co-operative basis. Moreover, land settlement facilitates the organisation of individual farmers into co-operative units which can enjoy some of the advantages of large scale systems of agriculture. The organisation of land settlements for co-operative effort, the economic provision of community services, and the demonstration of methods for effective agricultural advance can be most easily and effectively undertaken where Government retains certain conditions of control over the use of the land.

5. Considerable expenditure of public funds may be involved in land settlement. A rational policy of direction should therefore be undertaken. The settlements must be carefully and continuously supervised. The success of any settlement will ultimately depend, however, on the individual settlers themselves; it is therefore important to select persons of good character who are naturally suited to farming. Government policy in regard to financing land settlement should not be determined solely by the cost of the land and of its development and supervision, as the sum of those costs may prove too heavy a burden on the settlers, leading to their failure and consequently, to the waste of public funds. Charges for holdings on land settlements should be related to the productive capacity and economic returns of the land under conditions of good husbandry.

6. It is desirable that settlements should be provided with such amenities as roads, schools, public halls, light and water. The apportionment of the cost of these public services should not differ from the procedure generally followed in other rural areas, otherwise settlers may become either unduly privileged or financially overburdened in regard to these services. In order to develop a sense of individual as well as communal responsibility for public services, settlers should be required to bear a portion of the cost of these services by means of a local rate or levy.

7. The reorganisation of the use of land in Dominica for agricultural production through Government, sponsored and controlled settlement of small or medium-sized farmers, on land

of productive capacity now mainly abandoned, is a matter of the greatest importance to the entire community. In the reorganisation of suitable areas for agricultural production and in the achievement of the greatest possible measure of agricultural prosperity lies the main hope of securing and maintaining a higher standard of living among the Island's inhabitants. Accordingly, it is recommended that a Statutory Board be established, called the Land Settlement and Development Board, for the purpose of controlling, reorganising and developing such lands as may be vested in it in accordance with economic and social requirements of the community and with the need for conserving the natural resources of soil, forest and water, and that the supervision of land settlements, organised in accordance with the terms laid down by the Board and approved by the Legislature, should be the sole responsibility of the Agricultural Department.

METEOROLOGICAL SUMMARY, BOTANIC GARDENS, DOMINICA, 1945.

Year. 1945.	PRESSURE. *Corrected & reduced to 32° F., M.S.L.*				TEMPERATURE.								RELATIVE HUMIDITY.		RAIN-FALL.
	Highest.	Lowest.	Means.		Absolute.		Mean Values.						Means.		Amount.
					Max.	Min.	Max.	Min.	Dry Bulb.		Wet Bulb.				
	IN.	IN.	9 a.m.	3 p.m.	—	—	-		9 a.m	3 p.m.	9 a.m.	3 p.m.	9 a.m.	3 p.m.	—
	IN.	IN.	IN.	IN.	°F	°F	°F	°F	°F	°F	°F	°F	%	%	IN.
January ...	30.07	29.91	30.02	29.94	88	59	83	62	76	82	72	75	80	67	1.76
February ...	30.08	29.90	30.02	29.95	86	61	83	62	75	81	72	74	83	67	9.14
March ...	30.09	29.84	30.03	29.95	87	59	84	62	76	82	71	73	75	58	1.29
April ...	30.05	29.85	29.99	29.92	90	62	87	64	80	84	73	74	67	59	1.11
May ...	30.04	29.81	29.95	29.89	91	62	88	65	82	84	75	77	69	67	1.95
June ...	30.02	29.84	29.95	29.91	92	67	89	67	82	86	76	77	68	67	6.21
July ...	30.06	29.84	29.99	29.93	91	62	87	66	81	86	76	79	76	70	11.17
August ...	30.01	29.87	29.94	29.90	90	66	88	67	82	84	77	78	78	70	9.05
September ...	30.07	29.88	29.98	29.94	91	67	88	70	81	84	77	78	78	72	15.43
October ...	29.97	29.83	29.91	29.89	90	70	88	72	81	89	76	77	74	66	10.90
November ...	29.99	29.83	29.90	28.86	89	64	85	72	81	83	74	75	67	64	2.98
December ...	30.02	29.81	29.92	29.90	88	68	85	71	81	83	73	74	64	60	4.33
Year ...	30.06	29.86	29.98	29.91	89	64	86	63	80	84	74	76	73	65	75.32

Highest Barometer Reading	30.09 in. on 1st & 14th March.
Lowest ,, ,,	29.81 ,, ,, 23rd May, & 21st December.
Highest Maximum Temperature	92°F ,, 7th & 11th June.
Lowest Minimum Temperature	59°F ,, 6th January, 29th & 31st March.
Greatest Rainfall in 24 hours :	5.29 ins. 4th October.